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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/606,284
Filing Date: June 25, 2003
Appellant(s): SEPPINEN ET AL.

Francis J. Maguire
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/15/2010 appealing from the Office action mailed 12/4/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1. A dual mode transceiver, comprising:

a mixer; and

a controller configured to adapt the transceiver to operate in two modes operating either

as a radio frequency tag reader or as a Bluetooth transceiver by changing reception and transmission capabilities of the transceiver, wherein the controller is configured to control the mixer to operate in both of the two modes, wherein the mixer is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.

2. The dual mode transceiver of claim 1, wherein said Bluetooth transceiver is useable as a transceiver for a 2.4 gigahertz industrial, scientific and medical band radio frequency tag reader system.

3. The dual mode transceiver of claim 1, wherein said transceiver comprises an integrated circuit.

4. The dual mode transceiver of claim 1 for said use in said electronic device comprising a mobile terminal device.

5. Radio device having a radio receiver and a radio transmitter wherein operability of said device is by using a single antenna in two modes, wherein said device is configured to operate in a bluetooth mode and a radio frequency tag reader mode by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two modes, said radio receiver and said radio transmitter comprising a single transceiver that is operable as a bluetooth transceiver using said single antenna in said bluetooth mode and as a radio frequency tag reader using said single antenna in said radio frequency tag reader mode by control of its reception and transmission capabilities.

6. The radio device of claim 5, wherein said operability of said radio device in either mode is by using said radio receiver and said radio transmitter.

7. The radio device of claim 5, wherein said radio device is incorporated in a device having additional device functionality.

8. The radio device of claim 7, wherein said device in which said radio device is incorporated comprises a mobile telephone.

9. The radio device of claim 5, wherein said radio device is for installation in a mobile telephone.

10. Apparatus comprising a transceiver including a radio receiver and a radio transmitter, and further comprising a signal processor, wherein the radio receiver is responsive to an incoming analog radio signal for providing a down converted and modulated signal to said signal processor, wherein the radio transmitter is responsive to an output signal from said signal processor for transmission as an outgoing analog radio signal, said apparatus further comprising a controller for controlling said apparatus in two modes, a first mode for operating as a Bluetooth device and a second mode for operating as a radio frequency tag reader wherein said radio receiver and said radio transmitter comprise a single transceiver that is configured to operate with a single antenna as said radio frequency tag reader or as a Bluetooth transceiver by controlling a same mixer of said receiver or said transmitter to operate in both the first mode and the second mode.

11. A control for controlling a radio device in two modes, a first mode for operating as a Bluetooth transceiver and a second mode for operating as a radio frequency tag reader wherein said radio device comprises a single transceiver controlled by said control to operate as said radio frequency tag reader or as said Bluetooth transceiver by changing its reception and transmission capabilities by controlling a mixer to operate both in the first mode operating as a mixer for the radio device operating as said Bluetooth transceiver and in the second mode operating as a mixer for the radio device operating as said radio frequency tag reader.

12. Mobile telephone, comprising the transceiver of claim 1 in combination with means for communicating with a radio access network over a radio interface.

13. The mobile telephone of claim 12, wherein said means for communicating includes a signal processor and a mobile telephone transceiver.

14. Method, comprising, switching a mode of a single transceiver able to operate as a radio frequency tag reader in one mode and as a Bluetooth transceiver in another mode by adapting a same mixer of said single transceiver to operate in both modes, and

using a single antenna for said single transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.

15. The method of claim 14, wherein said single transceiver is both for interrogating a radio frequency tag and for participating in a Bluetooth piconet.

16. The method of claim 15, wherein said single transceiver and said single antenna are for use in a mobile telephone and wherein said method further comprises operating a mobile telephone transceiver of said mobile telephone over a radio interface to a radio access network.

17. The dual mode transceiver of claim 1, wherein a single antenna is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver.

18. The control of claim 11, wherein said single transceiver is configured to operate with a single antenna when operating as said radio frequency tag reader or as said Bluetooth transceiver.

19. The dual mode transceiver of claim 1, wherein said controller is configured to control the mixer to operate with a different gain and bias current according to mode of operation as a radio frequency tag reader or as a Bluetooth transceiver.

20. The apparatus of claim 10, wherein said controller is configured to control the mixer to operate with a different gain and bias current in said first mode than in said second mode.

21. The control of claim 11, wherein said control is configured to control the mixer to operate with a different gain and bias current in said first mode than in said second mode.

22. The method of claim 14, wherein said adapting said same mixer of said single transceiver to operate in both modes comprises adapting a first selected gain and bias current in said one mode and a second selected gain and bias current in said other mode.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

6,717,516	Bridgelall	4-2004
WO 01/39103 A1	Gunnarsson	5-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridgelall (US 6,717,516) in view of Gunnarsson (WO 01/39103).

Referring to Claim 1, Bridgelall teaches a dual mode transceiver, comprising:

A mixer; and

A controller configured to adapt the transceiver to operate in two modes operating either as a radio frequency (RF) tag reader 44 (fig. 2) or as a Bluetooth transceiver 42 (fig. 2) by changing its reception and transmission capabilities of the transceiver (see col. 5, lines 1-15).

Bridgelall does not teach controlling the mixer to operate in both of the two modes, wherein the mixer is usable for said transceiver operating as said RF tag reader or said Bluetooth transceiver. Gunnarsson teaches controlling the mixer to operate in both of the two modes (see mixer 27 of fig. 2 and pg. 5, lines 22-26 (RFID) as well as pg. 6, lines 4-7 (BT)) wherein the mixer is usable for said transceiver operating as said RF tag reader or said Bluetooth transceiver (see pg. 6, lines 4-7 noting that the same mixer 27 is integrated in the Bluetooth unit meaning that the same mixer is used for both Bluetooth and RFID functions). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gunnarsson to said device of Bridgelall in order to reduce the cost and hassle of carrying two separate devices.

Referring to Claim 2, Bridgelall also teaches said Bluetooth transceiver is useable as a transceiver for a 2.4 gigahertz industrial, scientific and medical band radio frequency tag reader system (see col. 5, lines 1-15).

Referring to Claim 3, Bridgelall also teaches an integrated circuit (see 58 in fig. 2).

Referring to Claim 4, Bridgelall also teaches a mobile terminal (fig. 1).

Referring to Claim 5, Bridgelall teaches a radio device having a radio receiver and a radio transmitter wherein operability of said device is in two modes (see col. 5, lines 1-15), wherein said device is configured to operate in a Bluetooth mode 42 (fig. 2) and a radio frequency (RF) tag reader mode 44 (fig. 2), said radio receiver and said radio transmitter comprising a single transceiver that is operable as a Bluetooth transceiver in said Bluetooth mode and an RF tag reader in said RF tag reader mode by control of its reception and transmission capabilities (see col. 5, lines 1-15).

Bridgelall does not teach using a single antenna in an RF tag reader mode or Bluetooth mode by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two modes. Gunnarsson teaches using a single antenna in an RF tag reader mode or Bluetooth mode (see pg. 5, lines 4-10 where the antenna is 25 in fig. 2) by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two (see mixer 27 of fig. 2 and pg. 5, lines 22-26 (RFID) as well as pg. 6, lines 4-7 (BT) and pg. 6, lines 4-7 noting that the same mixer 27 is integrated in the Bluetooth unit meaning that the same mixer is used for both Bluetooth and RFID functions). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gunnarsson to said device of Bridgelall in order to reduce the cost and hassle of carrying two separate devices.

Referring to Claim 6, Bridgelall also teaches said operability of said radio device in either mode is by using said radio receiver and said radio transmitter (see col. 5, lines 1-15).

Referring to Claim 7, Bridgelall also teaches said radio device incorporated in a device having additional device functionality (see col. 5, lines 29-46).

Referring to Claim 8, Bridgelall also teaches the device in which said radio device is incorporated comprising a mobile telephone (see 24, 26, and 28 in fig. 1).

Referring to Claim 9, Bridgelall also teaches said radio device installed in a mobile telephone (see 24, 26, and 28 in fig. 1).

Referring to Claim 10, Bridgelall teaches an apparatus comprising a transceiver including a radio receiver 38 and 34 (fig. 2), and a radio transmitter 38 and 34 (fig. 2), and further comprising a signal processor 50 (fig. 2), wherein the radio receiver is responsive to an incoming analog radio signal for providing a down converted and modulated signal to said signal processor, wherein the radio transmitter is responsive to an output signal from said signal processor for transmission as an outgoing analog radio signal (see col. 6, lines 37-60), said apparatus further comprising a controller for controlling said apparatus in two modes, a first mode for operating as a Bluetooth device and a second mode for operating as a radio frequency (RF) tag reader (see col. 6, lines 60-67 and col. 7, lines 1-3), wherein said radio receiver and said radio transmitter comprises a single transceiver that is configured to operate as an RF tag reader or as a Bluetooth transceiver (see col. 5, lines 1-15).

Bridgelall does not teach using a single antenna in an RF tag reader mode or Bluetooth mode by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two modes. Gunnarsson teaches using a single antenna in an RF tag reader mode or Bluetooth mode (see pg. 5, lines 4-10 where the

antenna is 25 in fig. 2) by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two (see mixer 27 of fig. 2 and pg. 5, lines 22-26 (RFID) as well as pg. 6, lines 4-7 (BT) and pg. 6, lines 4-7 noting that the same mixer 27 is integrated in the Bluetooth unit meaning that the same mixer is used for both Bluetooth and RFID functions). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gunnarsson to said device of Bridgelall in order to reduce the cost and hassle of carrying two separate devices.

Referring to Claim 11, Bridgelall teaches a control for controlling a radio device in two modes, a first mode for operating as a Bluetooth transceiver 42 (fig. 2) and a second mode to operating as a radio frequency (RF) tag reader 44 (fig. 2) wherein said radio device comprises a single transceiver controlled by said control to operate as said RF tag reader or as said Bluetooth transceiver by changing its reception and transmission capabilities (see col. 5, lines 1-15).

Bridgelall does not teach controlling the mixer to operate in both of the two modes, wherein the mixer is usable for said transceiver operating as said RF tag reader or said Bluetooth transceiver. Gunnarsson teaches controlling the mixer to operate in both of the two modes (see mixer 27 of fig. 2 and pg. 5, lines 22-26 (RFID) as well as pg. 6, lines 4-7 (BT)) wherein the mixer is usable for said transceiver operating as said RF tag reader or said Bluetooth transceiver (see pg. 6, lines 4-7 noting that the same mixer 27 is integrated in the Bluetooth unit meaning that the same mixer is used for both Bluetooth and RFID functions). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to provide the teachings of Gunnarsson to said device of Bridgelall in order to reduce the cost and hassle of carrying two separate devices.

Referring to Claim 12, Bridgelall also teaches means for communicating with a radio access network over a radio interface (see 214 of fig. 4).

Referring to Claim 13, Bridgelall also teaches a signal processor 50 (fig. 2) and a mobile telephone transceiver 28 (fig. 1).

Referring to Claim 14, Bridgelall teaches a method comprising:

Switching a mode of a single transceiver able to operate as a radio frequency (RF) tag reader 44 (fig. 2) in one mode and as a Bluetooth transceiver 42 (fig. 2) in another mode (see col. 5, lines 1-15).

Bridgelall does not teach using a single antenna in an RF tag reader mode or Bluetooth mode by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two modes. Gunnarsson teaches using a single antenna in an RF tag reader mode or Bluetooth mode (see pg. 5, lines 4-10 where the antenna is 25 in fig. 2) by control of a same mixer of said receiver or of said transmitter to operate said same mixer in both of the two (see mixer 27 of fig. 2 and pg. 5, lines 22-26 (RFID) as well as pg. 6, lines 4-7 (BT) and pg. 6, lines 4-7 noting that the same mixer 27 is integrated in the Bluetooth unit meaning that the same mixer is used for both Bluetooth and RFID functions). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of

Gunnarsson to said device of Bridgelall in order to reduce the cost and hassle of carrying two separate devices.

Referring to Claim 15, Bridgelall also teaches said single transceiver is both for interrogating an RF tag and for participating in a Bluetooth piconet (see col. 5, lines 1-15).

Referring to Claim 16, Bridgelall also teaches a single transceiver and single antenna for use in a mobile telephone 28 (fig. 1) and operating a mobile telephone transceiver of said mobile telephone over a radio interface to a radio access network (see 214 of fig. 4).

Referring to Claim 17, Gunnarsson also teaches a single antenna is useable for said transceiver operating as said radio frequency tag reader or as said Bluetooth transceiver (see pg. 5, lines 4-10 where the antenna is 25 in fig. 2).

Referring to Claim 18, Gunnarsson also teaches said single transceiver is configured to operate with a single antenna when operating as said radio frequency tag reader or as said Bluetooth transceiver (see pg. 5, lines 4-10 where the antenna is 25 in fig. 2).

Referring to Claim 19, Gunnarsson also teaches said controller is configured to control the at least one mixer to operate with a different gain and bias current according to mode of operation as a radio frequency tag reader or as a Bluetooth transceiver (see pg. 5, line 22 to pg. 6, line 7).

Referring to Claim 20, Gunnarsson also teaches said controller is configured to control the at least one mixer to operate with a different gain and bias current in said first mode than in said second mode (see pg. 5, line 22 to pg. 6, line 7).

Referring to Claim 21, Gunnarsson also teaches said control is configured to control the at lest one mixer to operate with a different gain and bias current in said first mode than in said second mode (see pg. 5, line 22 to pg. 6, line 7).

Referring to Claim 22, Gunnarsson also teaches said adapting said at least one mixer of said single transceiver to operate in both modes comprises adapting a first selected gain and bias current in said one mode and a second selected gain and bias current in said other mode (see pg. 5, line 22 to pg. 6, line 7).

(10) Response to Argument

(A) The appellant argued that the Gunnarsson reference does not teach a mixer operating in both the RFID mode and the Bluetooth mode because the Bluetooth function can operate without the addition of the mixer and the RFID module.

In Response to (A) While the Bluetooth module may be able to operate without the RFID module which includes a mixer 27, the mixer is definitely used by the Bluetooth module when the RFID module is included. Fig. 2 of Gunnarsson clearly shows that a signal from the Bluetooth module 24 can be input into the mixer 27 of the RFID module via signal path 29. There is no proof in Gunnarsson that when the RFID module is included in fig. 2, the mixer 27 is not used by the Bluetooth module 24.

Therefore, this clearly proves that the mixer 27 is used by both the Bluetooth module and the RFID module.

(B) The appellant argued that in pg. 6, lines 4-7 of Gunnarsson, which states that the mixer 27 is included in standard circuits of the Bluetooth radio, the embodiment is different from the other embodiment so only the Bluetooth radio uses the mixer 27 and therefore, Gunnarsson does not teach a mixer operating in both the RFID mode and the Bluetooth mode.

In Response to (B) Even though the embodiment may be different, the passage still mentions the mixer 27 of fig. 2, which includes the RFID module. Also, the passage does not state that the RFID module is excluded from the embodiment. Therefore, this passage simply states that the RFID module with mixer 27 are all integrated with the circuits of the Bluetoothe radio. Therefore, this also clearly proves that the mixer 27 is used by both the Bluetooth module and the RFID module.

(C) The appellant argued that in the dependent claims, Gunnarsson does not teach the controller configured to control the mixer to operate with different gain and bias current according to the mode of operation as a radio frequency tag reader or as a Bluetooth transceiver.

In Response to (C) pg. 6, lines 15-17 states that the RFID device operates at a high data rate and also lowers its rate between communication occasions. Lines 19-20 states that the data rate can also be adapted in accordance with the Bluetooth standard. This is the same as controlling with gain and bias current between the two modules.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Eugene Yun

/Eugene Yun/

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